

AMENDMENTS TO THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A magnetic rotation detector comprising:

a magnetic rotor having magnetic bodies disposed on an outer periphery portion thereof at intervals of a predetermined distance;

a detecting body that detects a change in magnetic flux that is caused by the magnetic bodies as the magnetic rotor rotates; and

an abnormality determination portion that monitors an apparent fluctuation in rotational speed of the magnetic rotor based on a result detected by the detecting body and that determines that the magnetic rotor is in an abnormal state if the fluctuation occurs at a specific position of the magnetic ~~rotor~~rotor,

wherein

the abnormality determination portion detects the occurrence of the fluctuation at the specific position of the magnetic rotor by making a determination on a distance between apparent positions of the magnetic bodies which correspond to the apparent fluctuation in rotational speed, and calculates the distance on the basis of a product of an interval of generation of noise in an output signal detected by the detecting body and a rotational speed of the magnetic rotor at the time of generation of noise.

- 2-3. (Canceled).

4. (Original) The magnetic rotation detector according to claim 1, wherein

the abnormality determination portion determines that the magnetic rotor is abnormal if the apparent fluctuation in rotational speed at the specific position lasts for a predetermined period or more.

5. (Original) The magnetic rotation detector according to claim 1, wherein

the abnormality determination portion determines that there is the apparent fluctuation in rotational speed if an absolute value of a derivative value of a rotational speed of the magnetic rotor exceeds a predetermined value.

6. (Original) The magnetic rotation detector according to claim 1, wherein the abnormality determination portion estimates that the fluctuation in rotational speed at the specific position is an abnormality resulting from adhesion of metal fragments to the magnetic rotor.

7. (Original) The magnetic rotation detector according to claim 1, wherein the abnormality determination portion does not determine that the magnetic rotor is in an abnormal state even if the fluctuation occurs at the specific position of the magnetic rotor, as long as the magnetic rotor rotates at a rotational speed lower than a predetermined value.

8. (Currently Amended) A vehicle control apparatus comprising:
a plurality of wheel speed detectors, each of which detect a wheel speed of a corresponding wheel by means of the magnetic rotation detector according to claim 1; and
a rough road determination portion that makes a determination on a rough road state of a road surface on the basis of the wheel speeds respectively measured by the wheel speed detectors,

wherein the rough road determination portion makes a determination on a rough road with a reduced degree of ~~reflection~~contribution of the wheel speeds detected using the magnetic rotation detector regarded as abnormal if the abnormality determination portion determines that the magnetic rotor is in an abnormal state.

9. (Original) The vehicle control apparatus according to claim 8, wherein the rough road determination portion makes a determination on a rough road after excluding the wheel speed detected using the magnetic rotation detector regarded as

abnormal, if the abnormality determination portion determines that the magnetic rotor is in an abnormal state.

10. (Original) A vehicle control apparatus comprising:

a plurality of wheel speed detectors, each of which detect a wheel speed of a corresponding wheel by means of the magnetic rotation detector according to claim 1; and

a vehicle speed determination portion that estimates a vehicle speed on the basis of the wheel speeds respectively measured by the wheel speed detectors,

wherein the vehicle speed determination portion estimates a vehicle speed with a reduced degree of reflection of the wheel speeds detected using the magnetic rotation detector regarded as abnormal, if the abnormality determination portion determines that the magnetic rotor is in an abnormal state.

11. (Original) The vehicle control apparatus according to claim 10, wherein

the vehicle speed determination portion estimates a vehicle speed after excluding the wheel speed detected using the magnetic rotation detector regarded as an abnormal, if the abnormality determination portion determines that the magnetic rotor is in an abnormal state.

12. (Currently Amended) A vehicle control apparatus of a vehicle, comprising:

a wheel speed detector employing the magnetic rotation detector according to claim 1; and

a vehicle control portion that controls ~~the behavior of a~~ the vehicle on the basis of a wheel speed measured by the wheel speed detector,

wherein the vehicle control portion inhibits vehicle control from being positively performed if the abnormality determination portion determines that the magnetic rotor is in an abnormal state.

13. (Currently Amended) A method of making a determination on an abnormality in a magnetic rotor having magnetic bodies that are disposed on an outer periphery portion thereof at intervals of a predetermined distance, comprising:

detecting a change in magnetic flux that is caused by the magnetic bodies as the magnetic rotor rotates;

monitoring an apparent fluctuation in rotational speed of the magnetic rotor on the basis of the detected change in magnetic flux;

determining whether the fluctuation in rotational speed occurs at a specific position of the magnetic rotor; rotor by making a determination on a distance between apparent positions of the magnetic bodies which correspond to the apparent fluctuation in rotational speed, and by calculating the distance on the basis of a product of an interval of generation of noise in an output signal detected by the detecting body and a rotational speed of the magnetic rotor at the time of generation of noise; and

determining that the magnetic rotor is in an abnormal state if it is determined that the fluctuation in rotational speed occurs at the specific position of the magnetic rotor.

14. (New) The magnetic rotation detector according to claim 1, wherein the abnormality determination portion detects the occurrence of the fluctuation at the specific position of the magnetic rotor by comparing the distance with a value corresponding to a length of an outer periphery of a rotating body that rotates co-axially with the magnetic rotor.

15. (New) The method of claim 13, wherein determining whether the fluctuation in rotational speed occurs at the specific position of the magnetic rotor comprises comparing the distance with a value corresponding to a length of an outer periphery of a rotating body that rotates co-axially with the magnetic rotor.